

# EUROPEAN PATENT OFFICE

## **Patent Abstracts of Japan**

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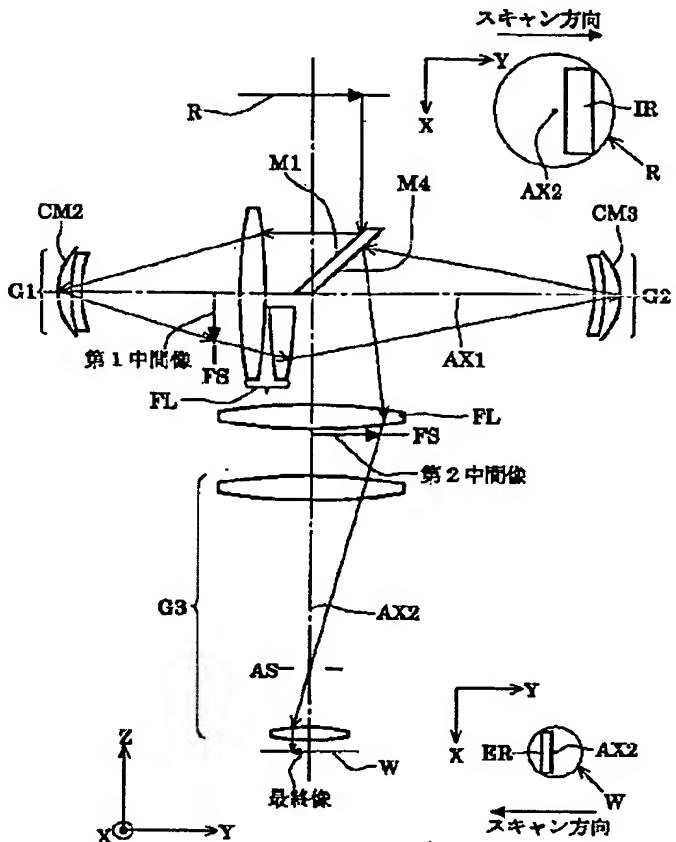
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G03F 7/20 H01L 21/027

**TITLE : CATADIOPTRIC SYSTEM AND  
EXPOSURE DEVICE HAVING THIS  
CATADIOPTRIC SYSTEM**



**ABSTRACT :** PROBLEM TO BE SOLVED: To provide a catadioptric system which is small in the distance between an object surface and an image surface, has simple constitution of a small number of lens elements, is capable of achieving high resolution of  $\leq 0.1 \mu\text{m}$  by using light of a vacuum UV wavelength of, for example,  $\leq 180 \text{ nm}$ .

**SOLUTION:** This catadioptric system has a first imaging optical system (G1) which has a concave mirror (CM2) and a plane reflecting mirror (M1) and forms the first intermediate image of the first surface in accordance with the light from the first surface (R), a second imaging optical system (G2) which has a concave mirror (CM3) and a plane reflecting mirror (M4) and forms the second intermediate image of the first surface in accordance with the light through the first imaging optical system and the third imaging optical system (G3) of a refraction type which forms the final image of the first surface on the second surface (W) in accordance with the light through the second imaging optical system.

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